

CLAIMS

I claim:

1. An identification tag for producing a radio frequency identification signal, said tag comprising:

5 a flexible substrate;

programmable encoder circuitry formed on said substrate for defining identification information;

an antenna; and

signal generator circuitry carried by said

10 substrate responsive to said encoder circuitry for applying a radio frequency signal bearing said identification information to said antenna.

2. The identification tag of claim 1 wherein said signal generator circuitry includes at least one
15 semiconductor device formed by deposition on said substrate.

3. The identification tag of claim 2 wherein said semiconductor device within said signal generator circuitry is formed of polymer materials deposited on said substrate.

20 4. The identification tag of claim 1 wherein said signal generator circuitry includes reactance elements formed by deposition on said substrate.

5. The identification tag of claim 1 wherein said encoder circuitry includes a plurality of conductive
25 paths selectively formed on said substrate for defining said identification information.

6. The identification tag of claim 5 wherein said encoder circuitry includes a plurality of conductive paths selectively deposited on said substrate to define said identification information.

5 7. The identification tag of claim 1 wherein said encoder circuitry includes at least one semiconductor device formed by deposition on said substrate.

8. The identification tag of claim 7 wherein said semiconductor device within said encoder circuitry is
10 formed of polymer materials deposited on said substrate.

9. The identification tag of claim 1 wherein said antenna is formed by depositing a conductive path on said substrate.

10. A system for providing identification
15 information, said system comprising:

a reader for emitting an electromagnetic signal;

a tag responsive to said electromagnetic
signal, *for* by producing an identification signal in
20 response thereto, said tag comprising:

a flexible substrate;

an antenna for receiving said
electromagnetic signal mounted on said
flexible substrate;

25 circuitry coupled to said antenna
for generating said signal in response

to said electromagnetic signal received
by said antenna; and

a first pattern of conductive ink
printed on said flexible substrate
5 defining at least one of a plurality of
selectable electrical connections
coupled to said circuitry for defining
said identification signal; and

wherein said reader is responsive
10 to said identification signal.

11. The identification tag of claim 10 wherein
said circuitry is defined by a second conductive ink pattern
and wherein said second conductive ink pattern defines a
plurality of selectively enabled reactance elements which
15 define said identification signal.

12. The identification tag of claim 10 wherein
said circuitry comprises a semiconductor chip and wherein
said first conductive ink pattern selectively enables one or
more of a plurality of inputs to said circuitry to define
20 said identification signal.

13. The identification tag of claim 10 wherein
said circuitry includes a second conductive ink pattern and
wherein said second conductive ink pattern defines a
plurality of semiconductor devices on said flexible
25 substrate, wherein said first conductive ink pattern

selectively enables one or more of a plurality of inputs to said circuitry to define said identification signal.

14. A method of forming an identification tag for producing a radio frequency identification signal, said

5 method comprising the steps:

dispensing a continuous strip of flexible substrate from a dispensing assembly;

depositing a first pattern of conductive ink on said flexible substrate to form an antenna;

10 depositing a second pattern of conductive ink on said flexible substrate to form signal generator circuitry for applying said radio frequency identification signal bearing identification information to said antenna; and

15 separating a portion of said flexible substrate including said deposited first and second patterns to define said identification tag.

15. The method of claim 14 wherein said second pattern of conductive ink defines a plurality of
20 semiconductor devices.

16. The method of claim 14 wherein said second pattern of conductive ink defines reactance elements.

17. The method of claim 14 additionally comprising the step of selectively depositing a third
25 pattern of conductive ink on said flexible substrate to programmably define said identification information.

18. The method of claim 14 additionally comprising the step of placing attachment means on said separated portion of said flexible substrate.

19. The method of claim 14 additionally
5 comprising the step of depositing a third pattern of
conductive ink on said flexible substrate for determining
the radio frequency identification signal produced by said
signal generator circuitry.

20. The method of claim 19 wherein said step of
10 depositing a third pattern of conductive ink additionally
defines a visually identifiable pattern.